



**Master on Industrial Electronics and Computers Engineering**  
**Specialization on Control, Automation and Robotics**

# **Autonomous Intelligent Systems 2023/2024:**

**Project 2 Report**  
**24/04/2024**

## **Group 4: RIMA Robotics**

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# Report:



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## O que foi feito?

- Fluxograma algoritmo de estacionamento
- Primeira implementação do algoritmo de estacionamento
- Alteração da máquina de estados

## Próximos Passos?

- Otimizar o sistema de controlo de velocidade (função potencial);
- Otimizar o sistema de estacionamento (Utilização da informação do LIDAR);
- Implementação do sistema de processamento de imagem.

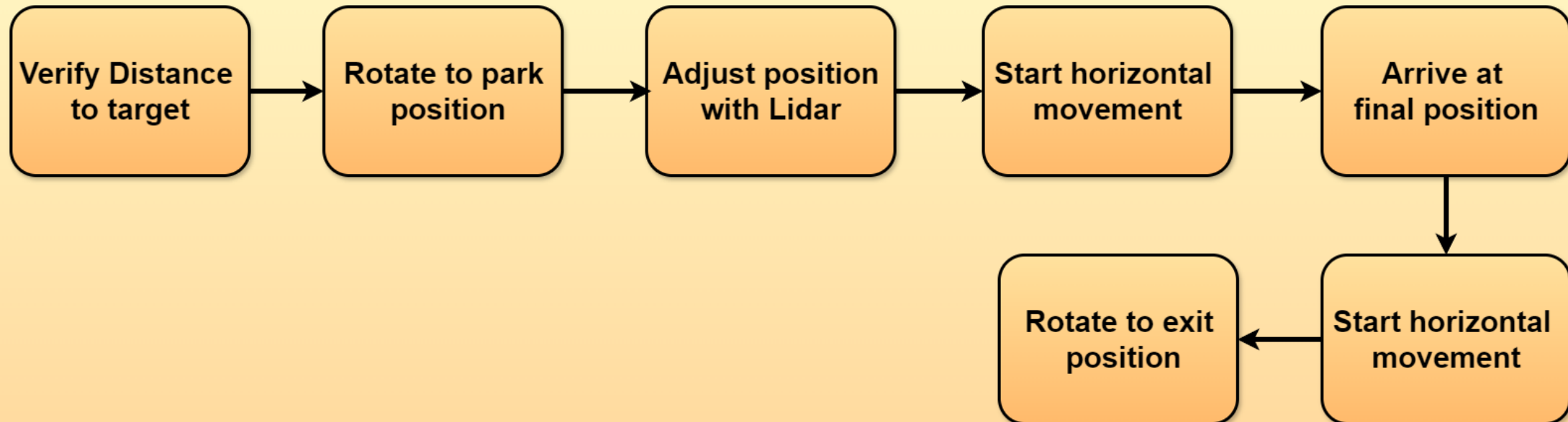


# Parking Algorithm:



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## Parking Subsystem



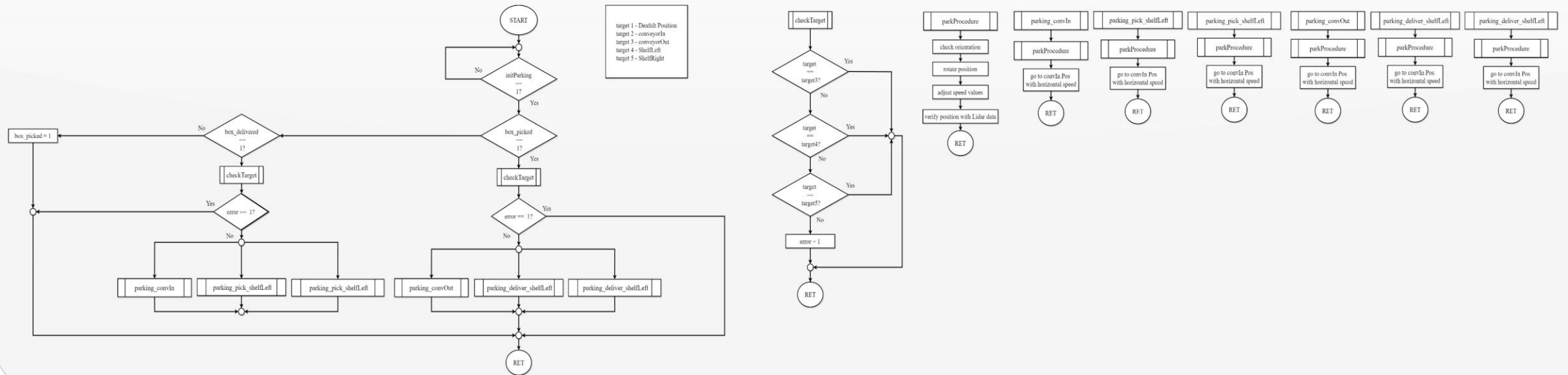


# Parking System Fluxogram:



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Parking System Fluxogram

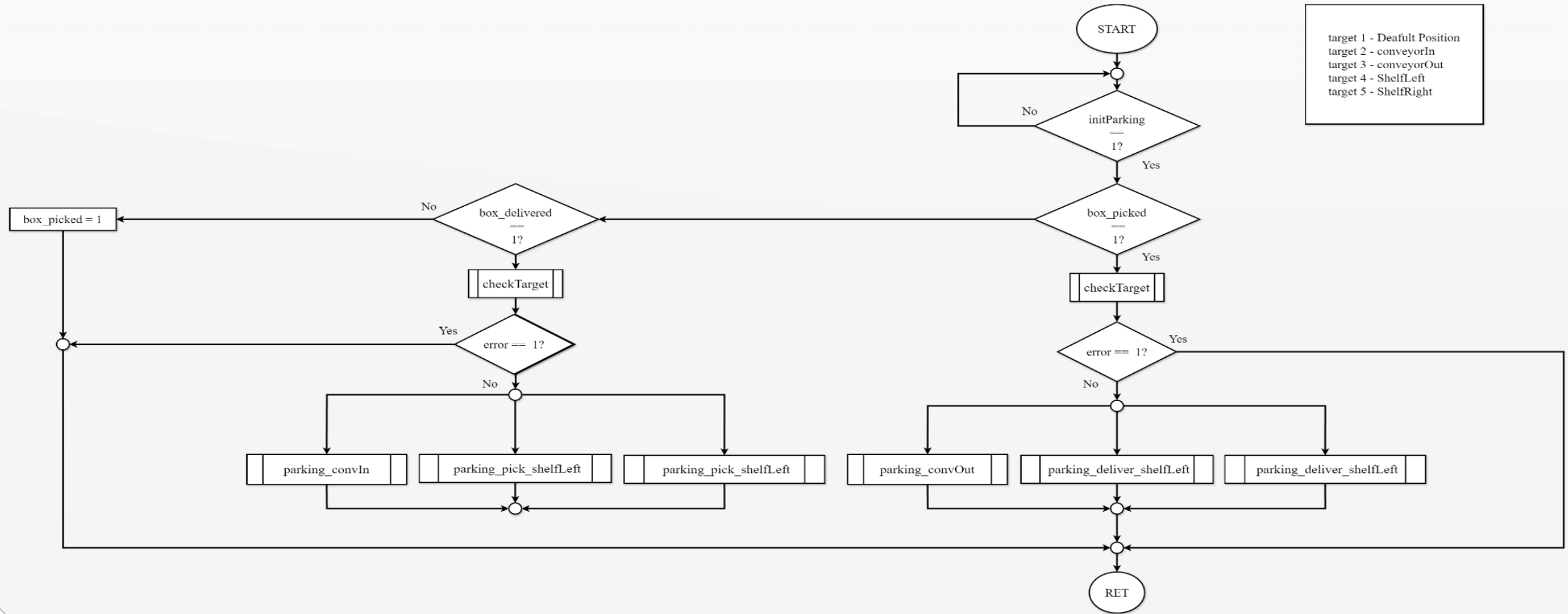




# Parking System Fluxogram:



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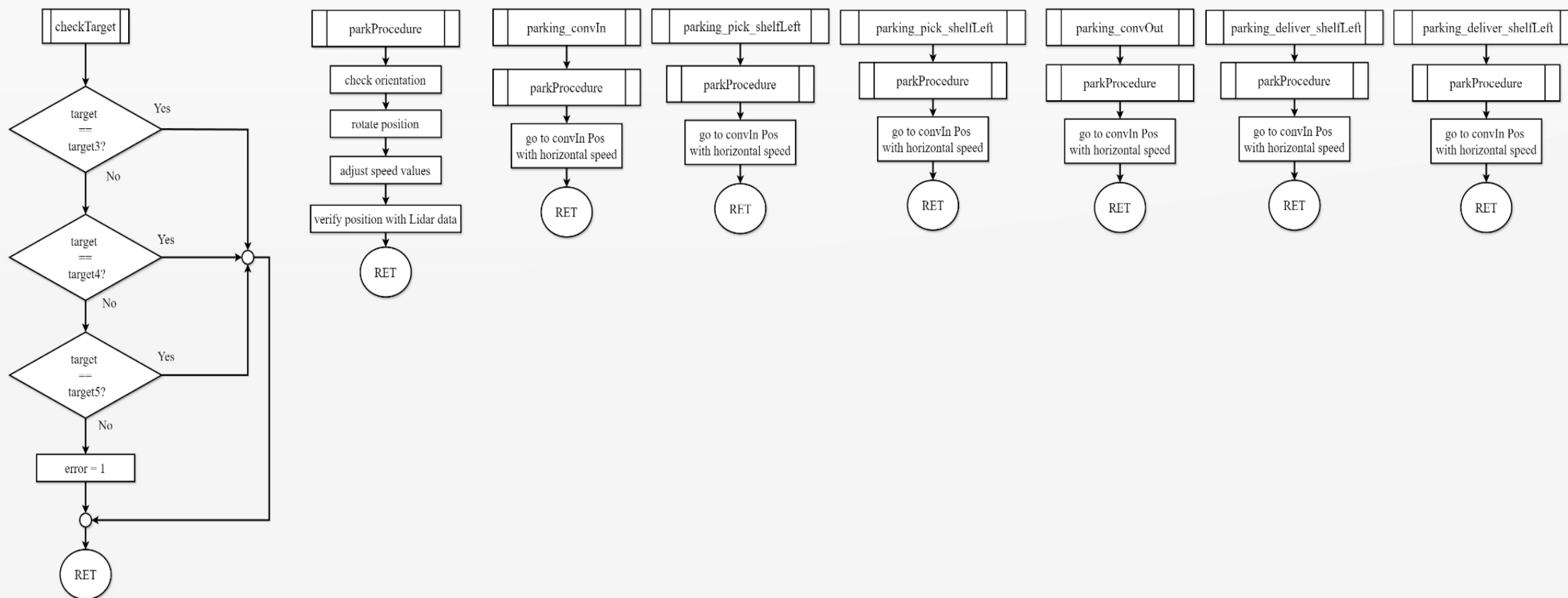




# Parking System Fluxogram:



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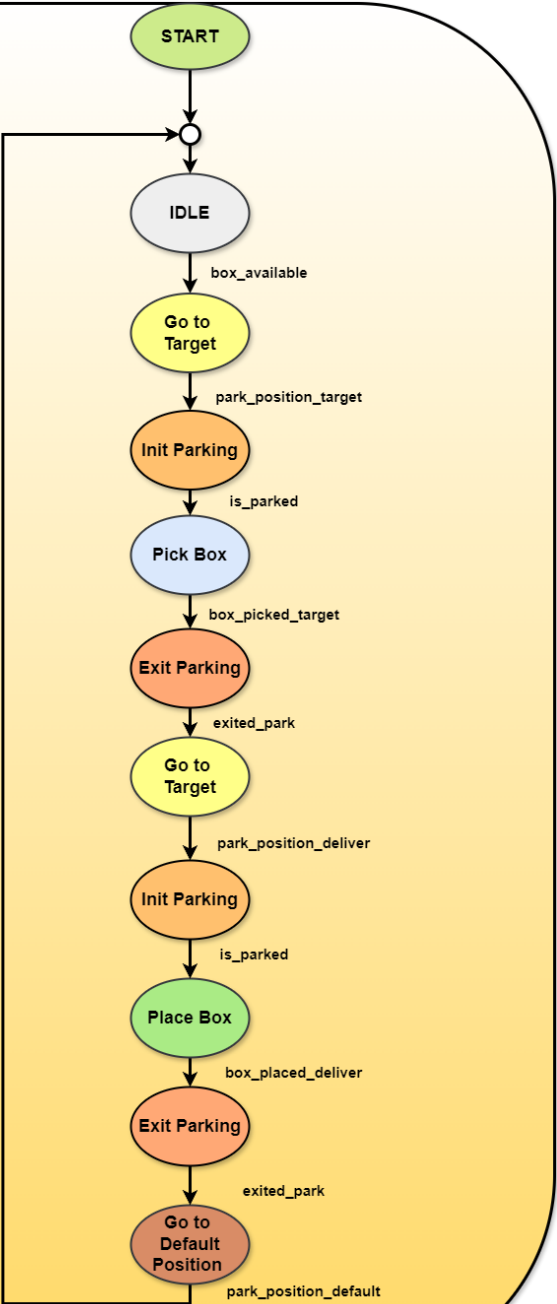




# New State Machine:

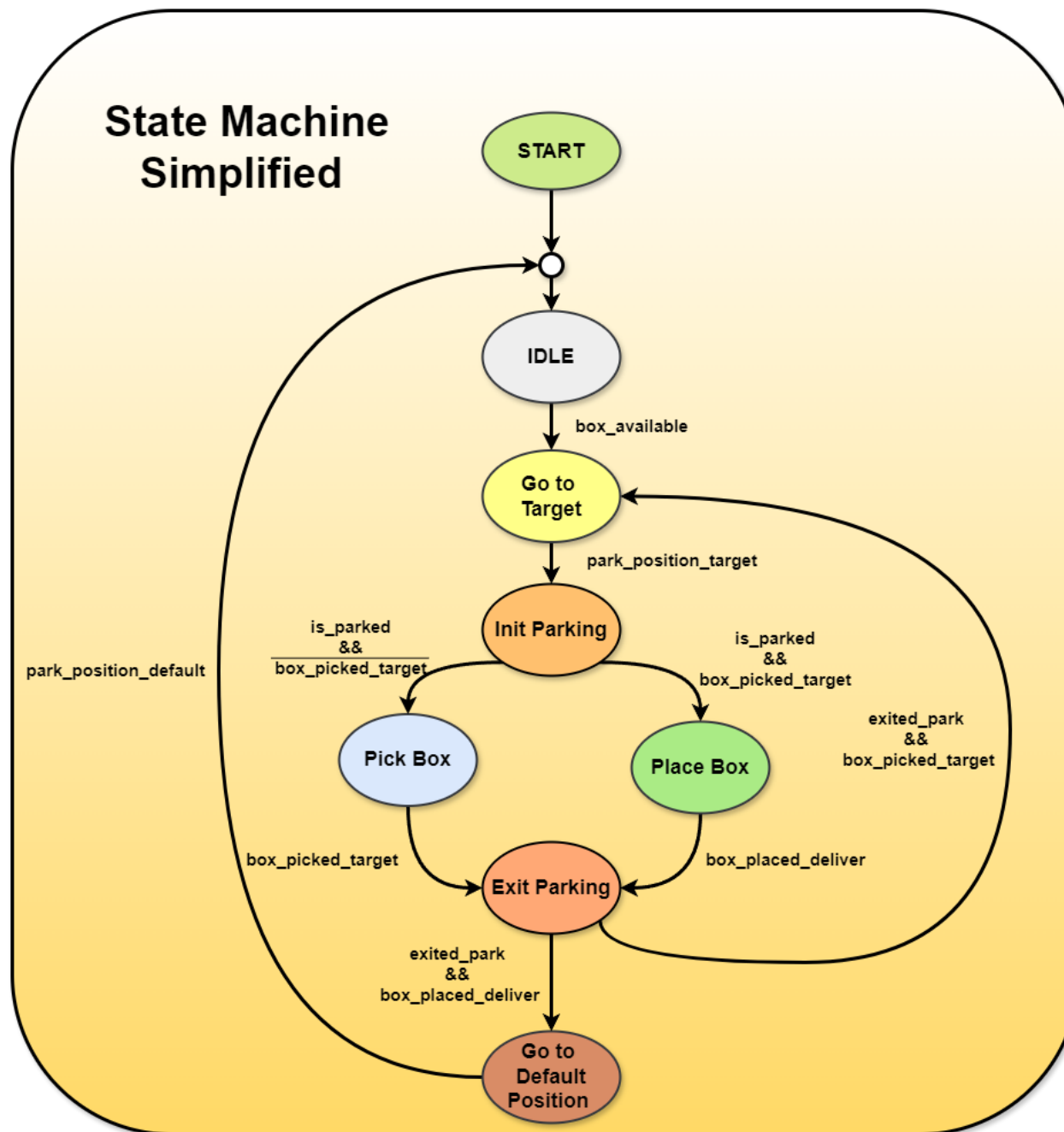
## State Machine

Subtitle	
box_available	- Check if there is a box to be picked
park_position_target	- Verify if robot is in the position to start parking
is_parked	- Check if robot is parked
box_picked_target	- Check if Robot picked the target
park_position_deliver	- Verify if robot is in the position to deliver target
exited_park	- Check if the robot has exited the park position
box_placed_deliver	- Check if Robot delivered the target
park_position_default	- Verify if Robot is in the default position (standby)





# New State Machine (Simplified):



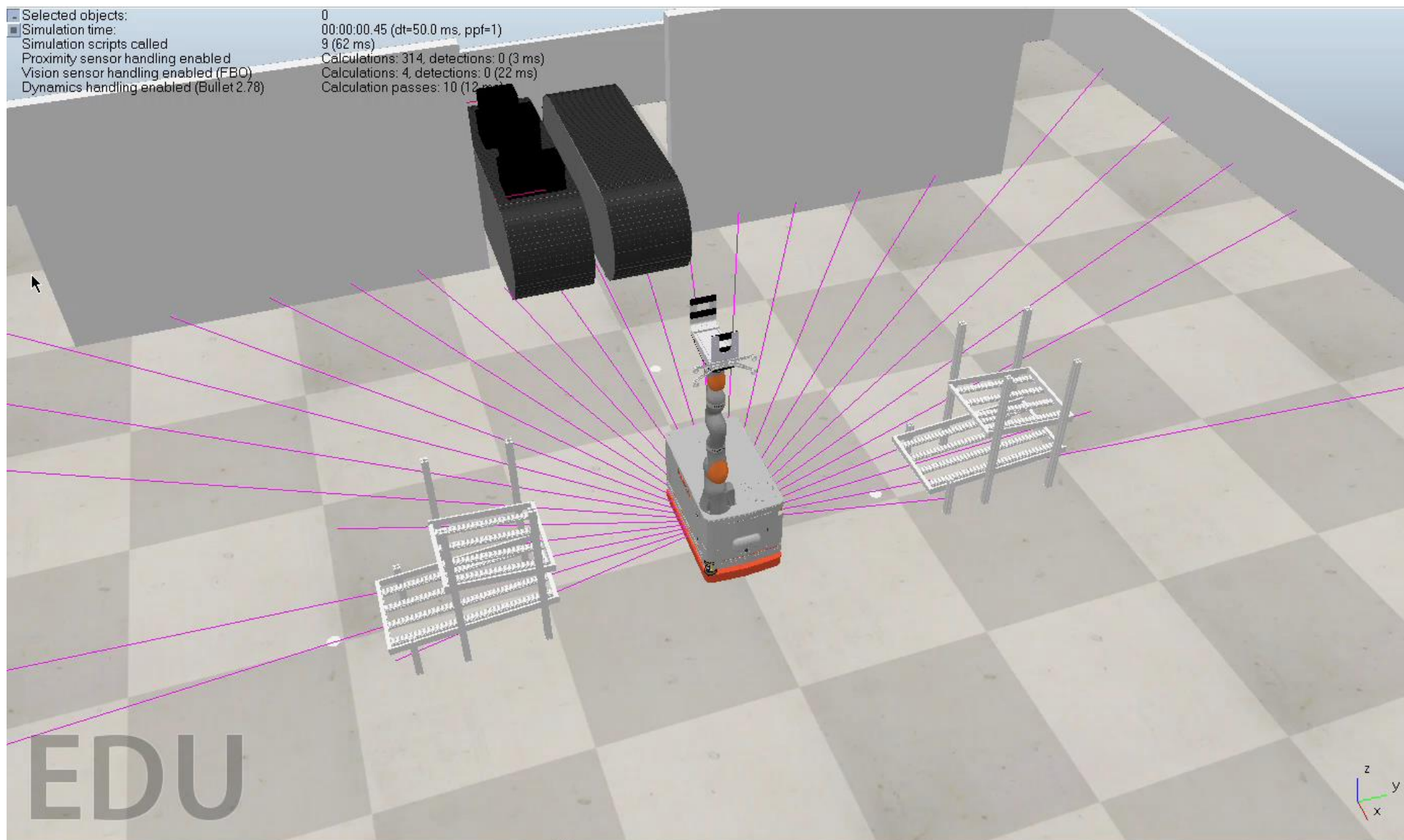




# Parking Test:



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**Thank you!**  
**Any questions?**

**May the force be with you!**

